

We Claim:

- Self

[illegible]

8. The method of claim 7 wherein said mask is a string of n-bits, where n is a function of the echo signal level, at least the most significant bits of said string having a zero value.

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9. The method of claim 8 wherein the bits of said mask are all zeros.

10. The method of claim 8 wherein at least the least significant bit of said mask has a one value.

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11. The method of claim 2 wherein during said masking step, a string of n-bits is combined with digitized signals received from said communication path, at least the most significant bits of said string having a zero value.

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12. The method of claim 11 wherein the bits of said mask are all zeros.

13. The method of claim 12 wherein at least the least significant bits of said mask has a one value.

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14. The method of claim 2 wherein during said monitoring step, an estimated echo signal is generated and the power level thereof is determined and wherein the masking step is performed after the estimated echo signal is subtracted from the signal received from said communication path.

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15. The method of claim 14 wherein said estimated echo signal is generated using a linear algorithm approximating the transfer function of said communication path.

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16. An echo suppressor to suppress echo signals generated in a communication path comprising:
a power level calculator determining the power level of signals supplied to said communication path; and

a mask generator responsive to said power level calculator and generating masks, said masks being generated as a function of the determined power level and being applied to the signals received from said communication path thereby to suppress echo signals received from said communication path.

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17. An echo suppressor as defined in claim 16 wherein said power level calculator generates an envelope following the power level of the signals supplied to said communication path.

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18. An echo suppressor as defined in claim 17 wherein said power level calculator includes an infinite impulse response (IIR) lowpass filter to generate said envelope.

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19. An echo suppressor as defined in claim 18 wherein said IIR lowpass filter generates said envelope by solving the equation:

$$\text{AbsY} = (1 - \alpha) \text{AbsY} + \alpha * \text{AbsY}_0$$

where alpha is a parameter of said IIR filter.

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20. An echo suppressor as defined in claim 19 wherein said mask generator calculates an echo signal level by solving the equation:

$$\text{Echo} = \text{AbsY} / 10^{(A/20)}$$

where A is the minimum attenuation of echo signals in said communication path, said echo signal level being used by said mask generator to select a mask to be combined with digitized signals received from said communication path.

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21. An echo suppressor as defined in claim 20 wherein said masks are in the form of strings of n-bits, where n is a function of the echo signal level, at least the most significant bits of said strings having zero values.

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22. An echo suppressor as defined in claim 21 wherein the bits of said strings are all zeros.

23. An echo suppressor as defined in claim 21 wherein at least the least significant bit of said mask has a one value.

24. In a telephone device including a handset having a speaker to
5 broadcast incoming signals and a microphone to receive outgoing signals, an echo
suppressor to suppress echo signals picked up by the microphone as a result of
acoustic coupling between said speaker and microphone comprising:
a power level calculator determining the power level of incoming
signals to be broadcast by said speaker; and
10 a mask generator responsive to said power level calculator and
generating masks, said masks being generated as a function of the determined power
and being applied to said outgoing signals thereby to suppress echo signals.

25. An echo suppressor to suppress echo signals generated in a
15 communication path comprising:
an echo canceler in parallel with said communication path, said echo
canceler having a transfer function approximating that of said communication path
and generating estimated echo signals in response to signals supplied to said
communication path, said echo canceler subtracting said estimated echo signals from
20 signals received from said communication path to generate residual echo error
signals; and
a processor receiving said estimated echo signals and said residual
echo error signals, said processor including a power level calculator to determine the
power level of the estimated echo signals; and a mask generator responsive to the
25 power level calculator and generating masks, said masks being generated as a
function of the determined power level and being applied to said residual echo error
signals thereby to suppress the same.